

Notice of Allowability

Application No.

10/608,031

Examiner

James D. Stein

Applicant(s)

TAKAHASHI ET AL.

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendmenet filed on 9/02/05.
2. ☒ The allowed claim(s) is/are 2-10 and 24.
3. ☒ The drawings filed on 25 February 2004 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☒ All b) ☐ Some* c) ☐ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date 1005.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____


John D. Lee
Primary Examiner


James D. Stein
Patent Examiner, AU 2874

DETAILED ACTION

This Office Action is responsive to the amendment filed on 9/2/05, which has been fully considered and entered into the prosecution record. The 9/2/05 amendment cancelled claim 1, amended claims 2-4, withdrew claims 11-22 and added new claim 23. The amendment filed on 9/23/05, which was intended to replace the 9/2/05 amendment, improperly attempted to reinstate and amend cancelled claim 1. Therefore, the amendment filed on 9/23/05 is considered non-responsive and has NOT been entered, although the claim language and remarks were incorporated by the Examiner's Amendment that follows.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Ed Garlepp and an email from Bradley Lytle on 10/26/05.

In order to clarify the record and place the application in condition for allowance, the application has been amended as follows:

Claim 24 (New): A piece of optical fiber having a length of twenty-five kilometers or more, an average transmission loss at a wavelength of 1383 nanometer (nm) over the entire length of the piece less than an average transmission loss at a wavelength of 1310 nm over the entire length of the piece, and a zero dispersion wavelength in the vicinity of 1310 nm, wherein the maximum value of transmission loss at each of the wavelengths of 1310 nm and 1550 nm in

Art Unit: 2874

any 1 km section taken along the optical fiber does not exceed an average transmission loss at said each of the wavelengths of 1310 nm and 1550 nm over the whole length of the piece by 0.03 dB/km or more, characterized in that the minimum value of transmission loss at the wavelength of 1383 nm in any 1 km section taken along the optical fiber does not exceed an average transmission loss at the wavelength of 1383 nm over the entire length of the piece by 0.03 dB/km or more.

Claim 2 (Currently Amended): The optical fiber according to claim [23] 24, wherein the maximum value of transmission loss at the wavelength of 1383 nm in any 1 km section does not exceed the average transmission loss at the wavelength of 1383 by 0.01 dB/km or more.

Claim 3 (Currently Amended): The optical fiber according to claim [23] 24, wherein a cable cutoff wavelength at a length of 22 meter (m) is less than 1380 nm.

Claim 4 (Currently Amended): The optical fiber according to claim [23] 24, wherein the average transmission loss at the wavelength of 1383 nm is less than the transmission loss at the wavelength of 1310 nm after hydrogen ageing.

Claim 5 (Currently Amended): An optical fiber having an MFD of 8 micrometer (μm) or more at 1310 nm, a zero dispersion wavelength out of a wavelength range of 1280 to 1324 nm, a dispersion in said wavelength range of 0.1 to 8.0 picosecond/nanometer/kilometer (ps/nm/km) in absolute value, a dispersion slope of 0.1 picosecond/nanometer²/kilometer ($\text{ps/nm}^2/\text{km}$) or less, a cutoff wavelength of 1270 nm or less determined according to a 22 m method not more than 1270 nm and an average transmission loss at the wavelength of 1310 nm of 0.4 dB/km or less.

Please cancel claims 11 – 23.

Allowable Subject Matter

Claims 2-10 and 24 are allowed.

The following is an examiner's statement of reasons for allowance: None of the cited prior art discloses or suggests the optical fiber with the characteristics as claimed.

The most relevant prior art, [USPAT 6,853,784] to Shimizu et al. and [USPUB 20030086667] to Berkely et al., both disclose related optical fibers with a transmission loss at 1383 nm less than the transmission loss at 1310 nm. However, they do not disclose the maximum value of the transmission loss at 1383 nm to exceed the average value of the transmission loss at 1383 nm by more than 0.03 dB/km. Furthermore, one of ordinary skill in the art would not have found obvious or have been motivated to modify the prior art to achieve the claimed subject matter. Therefore, the claimed invention is patentably distinct from the prior art.

The Shimizu et al. reference teaches an average transmission loss of 0.4 dB/km at a wavelength of 1310 nm and a dispersion slope of 0.1 in a range of 1300nm to 1625nm, which overlaps the range claimed by applicant. However, Shimizu et al. teach a cut off wavelength according to a 22m method of 1300nm or less, which is more than 1270nm as claimed by applicant. Shimizu et al. do not teach a mode field diameter of 8 micrometers or more at a wavelength of 1310nm, but rather a mode field diameter of 9.4 micrometers at a wavelength of 1550nm. Also, Shimizu et al. do not teach dispersion in the range of 0.1 to 8.0 ps/nm/km in the wavelength range of 1280nm to 1324nm. Shimizu teaches the dispersion of the fiber to range from 0.1ps/nm/km to 5.5ps/nm/km at a wavelength of 1383 nm (see also Fig. 4), which is beyond the wavelength range specified by applicant. Furthermore, Shimizu et al. do not teach a zero dispersion wavelength with in the range of 1280-1324nm. One of ordinary skill in the art

Art Unit: 2874

not
would have found it obvious or been motivated to modify the prior art to achieve the claimed invention. For these reasons, the claimed invention is patentably distinct from the prior art.

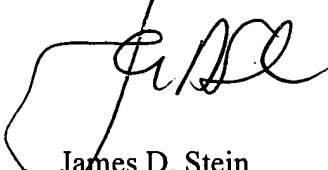
Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D. Stein whose telephone number is (571) 272-2132. The examiner can normally be reached on M-F (8:00am-4:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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John D. Lee
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